

WHAT WE CLAIM IS:

1. A method for manufacturing an electrical component, in which ions migrate between electrodes, said method comprising the steps of;

forming an ion conductive polymer layer containing dissolved ions, which has a semi-interpenetrating network system, on an electrode material layer of at least one of a pair of electrode structures comprising an electrode material layer formed on a current collector; and

arranging said pair of electrode structures at opposed positions and storing in a housing.

2. A method for manufacturing an electrical component according to claim 1, wherein said method further comprises a step of mixing an ion conductive salt with the ion conductive polymer forming material and forming or disposing the mixed ion conductive polymer layer on the electrode material layer.

3. A method for manufacturing an electrical component according to claim 2, wherein the ion conductive salt is substantially dissociated in the ion conductive polymer layer.

4. A method for manufacturing an electrical component according to claim 1, wherein, when forming the ion conductive polymer layer, a mixture of an ion conductive polymer and an ion conductive polymer raw material is coated on the electrode material layer.

5. A method for manufacturing an electrical component according to claim 1, wherein, when forming the ion conductive polymer layer, an ion conductive salt and an organic solvent are mixed with an ion conductive polymer forming material and formed on the electrode material layer, and the organic solvent is evaporated.

6. A method for manufacturing an electrical component according to claim 5, wherein the ion conductive salt is substantially dissociated in the ion conductive polymer layer even when the organic solvent is evaporated.

7. A method for manufacturing an electrical component according to claim 1, wherein a separator is disposed between said pair of electrode structures.

8. A method for manufacturing an electrical component according to claim 1, wherein the electrode material of at least one of the electrode structures is adhered and covered with an ion conductive polymer.

9. A method for manufacturing an electrical component according to claim 1, wherein the electrode material layer of at least one of the electrode structures contains a conductive material.

10. A method for manufacturing an electrical component according to

claim 1, wherein said pair of electrode structures are designed as a positive electrode structure and a negative electrode structure using an electrode active material as the electrode material, and the electrical component is designed as a battery.

11. A method for manufacturing an electrical component according to claim 10, wherein copper is used as the current collector of the negative electrode structure, and the negative electrode structure is designed larger than the positive electrode structure.

12. A method for manufacturing an electrical component according to claim 1, wherein a high surface area material having a larger surface area is used as the electrode material of said pair of electrode structures, and the electrical component is designed as an electrical double layer capacitor.

13. An electrical component, in which ions migrate between two electrodes, wherein

an ion conductive polymer layer with a semi-interpenetrating network system therein is positioned on an electrode material layer of at least one of a pair of electrode structures comprising an electrode material layer formed on a current collector; and

the pair of electrode structures are facing each other and are stored in a housing.

14. An electrical component according to claim 13, wherein said electrical component is a battery.

15. An electrical component according to claim 13, wherein said electrical component is an electrical double layer capacitor.